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Public Governance as the Source of Quality and Variety Gains from Transition

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Two economies, a centrally planned economy (CPE) and a post-transition regulated mixed market economy (RMME), are modeled in a static general equilibrium setting that allows for trade-offs among the quantity, quality and variety of production. Equilibrium in these economies is determined by the quality of public governance. In real world transitions from a CPE to a RMME, quality improvements and an increasing variety of production matter more than output volumes. Our model indicates that improvements in public governance, connected with a successful political transformation, facilitate such changes. This result is compatible with the view that the post-transition output path can be accounted for by observable initial conditions and liberalization policies. However, both are completely determined by the quality of governance in the pre-transition and post-transition states.

1 Introduction

More than ten years of transformation of centrally planned economies into market economies have led to markedly different outcomes in the economies of Central and Eastern Europe and the Commonwealth of Independent States. Campos and Coricelli (2002) provide two distinct reasons for these differences from empirical research. Some researchers maintain that the impact of liberalization and structural reforms is the determinant reason for the differences in outcomes, e.g., Selowsky and Martin (1997), Berg *et al.* (1999), Havrylyshyn *et al.* (1999), and de Melo *et al.* (2001). Others, especially when taking care of the simultaneity between output performance and reform policies, find empirical support for the significant influence of initial conditions, such as pre-transition macroeconomic imbalances and structural distortions, e.g., Krueger and Ciolko (1998), Heybey and Murrell (1999), and Falcetti *et al.* (2002). The 1999 EBRD Transition Report and recent papers by Kaufmann *et al.* (1999, 2000, 2002 and 2003) introduce the concept of public governance to this discussion. For a broad group of countries, Hall and Jones (1997) stress that differences in economic success are due to basic system determinants, such as primarily institutions and government policies. Hence, we focus on public governance as a crucial ingredient in the success of transition.

The quality and the variety of production and consumption are addressed only rarely in the literature on CPEs with Roland (1988) being a notable exception. Most models of transition also neglect these aspects in considering the liberalization of a formerly planned economy, although Berkowitz and Cooper (1997), Adachi (2000), Boeri and Oliveira Martins (2000), and Bose and Kemme (2002) are exceptions. We model both a centrally planned economy (CPE) and a post-transition regulated mixed

market economy (RMME) in a simple static general equilibrium setting that allows for trade-offs among the quantity, quality and variety of production. Equilibrium in each of these economies is determined by the quality of public governance. Using comparative statics, we relate transition outcomes to changes in the quality of governance. This approach is particularly useful for assessing the outcomes of transition with respect to market entry and changes in product quality, output and welfare.

Our paper combines two strands of literature; one encompasses the view that improvements in the quality of public governance provided by the state and its bureaucracy are good for transition. Myrdal (1970) and Stiglitz (2002) are examples in which good governance is based on more accountability and democratic progress. The second literature analyzes the quantity-quality-variety trade-off in international trade, but it can be applied to transition economies. CPE production volumes were impressive, but both the variety and the quality of production were low. To support sustainable growth quality improvements resulting from firm restructuring and an increasing variety of production from the growth of small and medium enterprises are more relevant than the growth of output. Our model indicates that improvements in the quality of public governance, connected with a successful political transformation, facilitate such changes.

The next section outlines the general properties of the institutional framework. Section 3 presents the basic features of the formal model, while section 4 applies this framework to a CPE to characterize the initial conditions for the transition. Section 5 models the RMME; section 6 demonstrates that a successful transition from a CPE to a RMME depends fundamentally on improvements in the quality of governance. This result is compatible with the view that the post-transition output path can be accounted for by observable initial conditions and liberalization policies. However, both are completely determined by the quality of governance in the pre-transition and post-transition states. Section 7 concludes with policy implications and suggestions for further research.

2 The Quality of Governance

Kaufmann, Kraay, and Zoido-Lobatyn (2000) define governance in terms of the traditions and institutions that determine how authority is exercised. These include the process by which governments are selected and held accountable and the capacity of governments to manage resources efficiently and to formulate, to implement, and to enforce sound policies and regulations. By concentrating on resource allocation, much of the literature focuses on the interactions of an inefficient bureaucracy with private markets. E.g., Hall and Jones (1997) view a corrupt bureaucracy as acting as a tax on the productive activities in the economy. However, agency problems between the state and its bureaucracy may also have an impact on output and growth if the latter provides public goods and services. In this literature, the bureaucracy is assumed to be better informed than the political authority about its own technology and acts in

its self-interest.[1] Both approaches to public governance conclude that productive inefficiency results from bureaucratic intervention, either in the private or in the public sector. Our paper is closer to the latter approach; however, we do not assume *a priori* that the government maximizes welfare. Moreover, our focus is not on productive inefficiency but rather on the distorted allocation of resources.

Initially, we explore the relevant features of relationships among the state, the government, the bureaucracy, and the public. We do not distinguish between the state and the government but use both terms interchangeably to refer to the political authority. Among bureaucratic agencies, we differentiate between a central bureaucracy, i.e., a central planning agency in a CPE or a regulatory agency in a RMME, and the management of state-owned enterprises (SOEs). The relationship between the political authority and the public raises the fundamental issue of whether the government acts as the agent of its citizens or as the instrument of some ruling elite that has captured the state (Hellman and Schankerman, 2000). This paper follows Grossman (2000), who conjectures that characterizing the state as the agent of its citizens involves a paradox. If the state is to enforce collective choices over resource allocation and income distribution, the citizenry must subject itself to the state's power to tax and to spend. Hence, the state can use the sovereign powers to exploit its citizens so that it becomes an instrument of a ruling elite that appropriates the net revenues of the state. We assume that this net revenue is a constant fraction of the total size of the state-owned economy, i.e. total SOE output, and that this fraction is higher in a CPE than in a RMME. We also assume that this benefit to the elite does not diminish the representative consumer's consumption.[2] However, the proprietary state faces constraints in maximizing the wealth of the ruling elite because of the potential threat of the elite's deposition from power. In a CPE, the ruling elite consists of the Communist Party and the planning bureaucracy. In a RMME, the ruling elite consists of the members of a multi-party system plus the regulatory bureaucracy.[3] Thus, bureaucratic central agencies are always part of the state's ruling elite.

In a CPE, all production takes place within SOEs; in a RMME, the potential benefits from SOE activity motivate government restriction of non-state market access. The SOE management's objective is to maximize its discretionary budget, which implies a principal-agent relationship between the government and SOE management. In addition, the government guarantees to balance SOE budgets in return for output benefits. Hence, the government may tax consumers to subsidize producers. While this

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1 Niskanen (1971) analyzes principal-agent relationships between a welfare-maximizing political sponsor and bureaus acting to maximize their discretionary budget, i.e., the difference between the total budget and the cost of producing the required output.

2 The ruling elite is assumed to be interested in exerting power as a goal in itself. Excluding the consumption or resale of potential private benefits abstracts from the corruption aspect of governance, which is the focus of papers by Shleifer and Vishny (1993), Banerjee (1997), and Ehrlich and Lui (1999).

3 Since regulation implies the absence of pure competition, regulatory power may be exercised by entering into collusive agreements with the regulated firm (Laffont and Meleu, 2001).

situation may be most relevant to a pre-transition CPE, it also applies to various institutional settings, especially those in post-transition economies.

Based on this discussion, we consider three economic agents. These are the public, i.e. a representative consumer, SOE management, which is joined by non-state firms in the RMME, and the government acting in the interest of a ruling elite that includes the central bureaucracy. Modeling the behavior of a proprietary state involves the maximization of the wealth of the ruling elite subject to explicitly formulated constraints referring to the features of the political system that determine the probability of the ruling elite's deposition from power. However, to simplify the model, we proxy government behavior as maximizing a weighted objective function of total SOE output, which is the source of benefits to the ruling elite, and of consumer welfare. The respective weights indicate the strength of the constraints upon the state. The quality of governance is defined as the degree to which the government maximizes consumer welfare. We assume that a successful political transition towards more accountability and more democracy reduces the power of the ruling elite and increases the constraints upon the state, i.e. it improves the quality of governance.

3 The Model

The CPE and the RMME are sufficiently similar to allow for a treatment within a standard regulatory model. The model consists of a representative consumer maximizing utility subject to a budget constraint, many producers of differentiated industrial products maximizing profits, augmented by government subsidies in the case of SOEs, and the government, which maximizes a social welfare function subject to the constraint that subsidies be covered by tax receipts. In order to focus on the product market, we assume that the representative consumer supplies a fixed amount of labor $L.$ Since producers maximize profits by employing L, full employment is always assured. The nominal wage rate is normalized to 1 throughout.

The treatment of consumption follows Dixit and Stiglitz (1977) but takes account of product quality. Product quality, denoted q_j, takes continuous values between low quality, q_l, and high quality, q_h, such that $0 < c < q_l < q_j < q_h$ where c is a constant and $q_l - c$ is arbitrarily close to 0. Utility is represented by:

$$U = \left[\sum_j (\alpha_j x_j)^\beta \right]^{1/\beta}, j = 1,...,n; 0 < \beta < 1; \beta = 1 - 1/\sigma \qquad (1)$$

for all available n products.[4] The constant elasticity of substitution between any product pair is denoted σ; $\alpha_j = q_j - c$ describes the consumer's quality preferences, and x_j indicates quantity consumed of each product variant. Maximizing (1) subject to a budget constraint yields aggregate demand functions for each product variant j as:

$$x_j = \frac{(p_j/\alpha_j^{\beta})^{1/(\beta-1)}}{P^{\beta/(\beta-1)}} Y^d, \tag{2}$$

where $P = [\sum_j (p_j/\alpha_j)^{\beta/(\beta-1)}]^{(\beta-1)/\beta}$, for $j = 1,...,n$, is the dual price index to (1) aggregating individual product variant prices p_j.[5] Disposable income, denoted Y^d, is defined as labor income L minus a lump sum tax T:

$$Y^d = L - T. \tag{3}$$

When all products are of the same quality q and are priced equally, they are consumed in identical volumes so that demand (2) simplifies to $x = Y^d/np$, which is equivalent to the representative consumer's budget constraint. Thus, equilibria that satisfy this budget constraint are also market clearing. Utility simplifies to:

$$U = \alpha X n^{\frac{1}{\beta}-1}, \tag{1'}$$

where $X = nx$ is total consumption. The equilibria considered in this paper will be of this simplified type. *Ceteris paribus,* consumers prefer more variety, quality and volume.

Differentiated consumer products are produced subject to a symmetric production function given by:

$$x_j = \frac{l_j - f}{q_j}, \tag{4}$$

where $l_j > f$ denotes labor input and f is a positive constant. Since the nominal wage rate is 1, total costs are given by:

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4 The notation in equation (1) does not allow product variants to be consumed in different qualities. This anticipates the equilibrium property of one-product-variant firms, i.e. that each product variant is produced and consumed only in one quality specification.

5 For a derivation of demand equation (2), see Venables (1987) where our quality preference term α_j is introduced as a preference over country-specific product variants.

$$K_j = q_j x_j + f, \quad j = 1,...,n, \tag{5}$$

where a higher product quality implies higher variable costs of production. Each producer's total revenue, including any government subsidy s_j, is:

$$R_j = p_j x_j + s_j, \quad j = 1,...,n. \tag{6}$$

The government's budget constraint ensures that $\sum_j n s_j$ equals the lump sum tax T paid by the representative consumer.

Anticipating the equilibrium property that all products are of the same quality and are produced in the same quantities, summing equation (4) over all producers characterizes the fundamental trade-offs among total output, variety, and quality as:

$$X = \frac{L - nf}{q}. \tag{7}$$

Ceteris paribus, total output X is maximized when $n = 1$, assuming n to be a positive integer. Substituting (7) into (1') yields:

$$U = \frac{\alpha}{q} n^{(\frac{1}{\beta}-1)}(L - nf), \tag{1''}$$

which is strictly concave in n and is maximized for $n^* = (1-\beta)L/f$.[6]

The objective function maximized by governments is a combination of consumer welfare and public sector output given by:

$$Z = (\gamma X)^{\theta} U^{1-\theta}, \tag{8}$$

where γ is the fraction of SOE output in total output; θ describes the weight which the government puts on total SOE output, and $(1-\theta)$ defines the quality of governance measured by the weight put on consumer welfare. Although the usual technical constraint requires $0 \le \theta \le 1$, we assume that $0 \le \theta \le c/q_l < 1$. By assumption, $q_l - c$ may be arbitrarily close to 0 so that this does not imply a loss of generality.

Governments have various instruments available to realize their choices; the CPE government implements product diversity, i.e. the number of producers, by *fiat*. Regulation of entry in a RMME is also implemented by *fiat*. In a CPE, prices and subsidy incentive schemes guide firm behavior

[6] The first-order condition is $\partial U/\partial n = \frac{\alpha}{q}\left[\frac{1-\beta}{\beta} n^{1/\beta-2}(L-nf) + n^{1/\beta-1}(-f)\right] = 0.$ Algebraic manipulation yields the solution for n^*.

towards meeting the quantity and quality plan. However, regulators in a RMME lack the power to create these incentives but instead use price regulation and subsidies to ensure zero profits for public enterprises. Product quality and quantity are determined by the interaction between government regulation, SOE subsidization, and the monopolistic producers that maximize profits.

4 The Centrally Planned Economy

In a CPE, all production takes place in SOEs such that $\gamma = 1$ in equation (8). Equilibrium is established by the government's optimal plan, which is instituted by *fiat* and SOE subsidization. The CPE government formulates a plan $\{n^{cp}, x^{cp}, q^{cp}\}$ for the number of equal-sized SOEs n^{cp}, which determines product variety, SOE size x^{cp}, and product quality q^{cp} by maximizing the objective function (8). In implementing the plan, the CPE government balances SOE budgets based on differential information about n, x and q. The government can observe and control the number of producers easily and has some information over firm-level production volumes for which it may create appropriate firm-level incentives. However, due to prohibitively costly decentralized monitoring, the government has no information on firm-level product quality. Rather, costless monitoring on the market provides information on the average quality produced by all firms.

Substituting (1'') and trade-off (7) for U and X in (8), the CPE government objective function becomes:

$$\begin{aligned} \hat{Z} &= \left[\frac{(L-nf)}{q}\right]^{\hat{\theta}} \left[\frac{\alpha n^{(1/\beta-1)}(L-nf)}{q}\right]^{(1-\hat{\theta})} \\ &= \frac{\alpha^{1-\hat{\theta}}}{q} n^{(1/\beta-1)(1-\hat{\theta})}(L-nf), \end{aligned} \tag{9}$$

where CPE values are indicated by a circumflex. Equation (9) is a separable function of n and q that already incorporates the trade-offs in (7). When formulating the optimal plan, the government aspires to efficient production. The first-order condition for maximizing (9) with respect to n is:

$$\begin{aligned} \frac{\partial \hat{Z}}{\partial n} = [\alpha^{(1-\hat{\theta})}/q][(1/\beta-1)(1-\hat{\theta})n^{(1/\beta-1)(1-\hat{\theta})-1}(L-nf) \\ - fn^{(1/\beta-1)(1-\hat{\theta})}] = 0. \end{aligned}$$

Algebraic manipulation yields:

$$(1/\beta-1)(1-\hat{\theta})(L-nf)/n = f,$$

which gives the CPE government's most preferred variety of production as:

$$n^{cp} = \frac{(1-\beta)(1-\hat{\theta})}{1-\hat{\theta}(1-\beta)}\frac{L}{f}. \tag{10}$$

From (10), $dn^{cp}/d\hat{\theta} < 0$. Obviously, if $\hat{\theta} = 0$, i.e., if the CPE government maximizes consumer welfare, $n^{cp} = n^* = (1-\beta)L/f$. If $\hat{\theta}$ approaches c/q_l the government's objective comes close to $\hat{Z} = X$, which is maximized at $n^{cp} = 1$. Hence, the one-firm economy of the Stalinist planning ideal is optimal in this case.[7]

To derive the solution for optimal quality from (9), the first-order condition requires that:

$$\frac{\partial \hat{Z}}{\partial q} = \frac{(1-\hat{\theta})\alpha^{-\hat{\theta}} q - \alpha^{(1-\hat{\theta})}\left[n^{(\frac{1}{\beta}-1)(1-\hat{\theta})} (L-nf) \right]}{q^2}$$

$$= \frac{\alpha^{-\hat{\theta}}}{q^2}\left[(1-\hat{\theta})q - \alpha\left[n^{(\frac{1}{\beta}-1)(1-\hat{\theta})} (L-nf) \right]\right] = 0.$$

Because (7) requires that $L > nf$, $\partial \hat{Z}/\partial q = 0$ if and only if $(1-\hat{\theta})q - \alpha = 0$, i.e. for $q = \frac{q-\alpha}{\hat{\theta}}$. From the definition of $\alpha = q - c$,

$$q^{cp} = c/\hat{\theta}. \tag{11}$$

With (7), the quantity part of the optimal plan $\{n^{cp}, x^{cp}, q^{cp}\}$ becomes:

$$x^{cp} = \frac{\hat{\theta}\beta f}{(1-\hat{\theta})(1-\beta)c}. \tag{12}$$

With full information, the government can determine directly the equilibrium number of producers by *fiat* such that:

$$\hat{n} = n^{cp} = \frac{(1-\hat{\theta})(1-\beta)}{1-\hat{\theta}(1-\beta)}\frac{L}{f}. \tag{13}$$

However, equilibrium product volumes and quality are determined as the solution of a simple static non-cooperative game between the government

[7] If the government's objective can be described by a quasi-concave function over X and U, it is maximized by some n such that $1 < n < (1-\beta)L/f = n^*$.

and the firms. Subject to guaranteeing SOE budget balance, the government chooses prices and subsidies given its information on quantity and quality, while firms choose quantity and quality of production to maximize their budgets Φ_j, i.e. total revenues including subsidies minus the costs of meeting the plan, taking prices and the plan as given. From the cost and revenue functions in (5) and (6), the firm's budget is:

$$\Phi_j = (p_j - q_j)x_j + s_j - f. \tag{14}$$

When devising an incentive-compatible subsidy, the government replicates the solution to the firm's problem by maximizing Φ_j. Assuming no informational asymmetries, the government may formulate individual incentives for both the quantity and the quality of output such that $s_j = s_j(q_j, x_j)$. Especially, as the government wants to implement $x_j = x^{cp}$ and $q_j = q^{cp}$, this requires from (14) that

$$\begin{aligned} \frac{\partial \Phi_j}{\partial q_j} &= -x_j + \frac{\partial s_j}{\partial q_j} \geq (\leq) 0, \text{ for } q_j \leq (\geq) q^{cp}, and \\ \frac{\partial \Phi_j}{\partial x_j} &= p_j - q_j + \frac{\partial s_j}{\partial x_j} \geq (\leq) 0, \text{ for } x_j \leq (\geq) x^{cp}. \end{aligned} \tag{15}$$

(15) yields two necessary conditions for subsidy design, namely $\partial s_j / \partial q_j \geq (\leq) x_j$ for $q_j \leq (\geq) q^{cp}$, and $\partial s_j / \partial x_j \geq (\leq) q_j - p_j$ for $x_j \leq (\geq) x^{cp}$. As can be easily checked, these conditions are satisfied by a subsidy scheme such as $s_j = q_j(q^{cp} + \frac{x_j - q_j}{2}) + x_j(x^{cp} - p_j + \frac{q_j - x_j}{2}) + d$, where d is a constant. The equilibrium condition $\Phi_j = 0$ determines $d = f - \frac{(q^{cp})^2 + (x^{cp})^2}{2}$, such that:

$$s_j = q_j(q^{cp} + \frac{x_j - q_j}{2}) + x_j(x^{cp} - p_j + \frac{q_j - x_j}{2}) - \frac{(q^{cp})^2 + (x^{cp})^2}{2} + f. \tag{16}$$

Given this subsidy scheme, the firm's objective function becomes:

$$\begin{aligned} \Phi_j &= (p_j - q_j)x_j + s_j - f \\ &= q_j(q^{cp} - \frac{q_j}{2}) + x_j(x^{cp} - \frac{x_j}{2}) - \frac{(q^{cp})^2 + (x^{cp})^2}{2}. \end{aligned} \tag{17}$$

If the firm maximizes (17) over x_j and q_j the optimal plan given by (10), (11), and (12) is established as the informationally unconstrained first-best solution with $\Phi_j = 0$. Uniform pricing, i.e., $p_j = p$, ensures that the consumer's budget constraint is met and that markets clear.

Compared with the full information benchmark, consider the situation in which actual product quality q_j differs from the average quality level

observed by the government, $\overline{q}$. This will not change the optimal plan derived under full information. However, if the government offers the same subsidy scheme, the informational constraint will result in:

$$s_j = \overline{q}(q^{cp} + \frac{x_j - \overline{q}}{2}) + x_j(x^{cp} - p_j + \frac{\overline{q} - x_j}{2}) - \frac{(q^{cp})^2 + (x^{cp})^2}{2} + f. \tag{16'}$$

The firm's objective function becomes:

$$\begin{aligned}\Phi_j &= (p_j - q_j)x_j + \overline{q}(q^{cp} + \frac{x_j - \overline{q}}{2}) + x_j(x^{cp} - p_j + \frac{\overline{q} - x_j}{2}) - \frac{(q^{cp})^2 + (x^{cp})^2}{2} \\ &= -q_j x_j + \overline{q}(q^{cp} + \frac{x_j - \overline{q}}{2}) + x_j(x^{cp} + \frac{\overline{q} - x_j}{2}) - \frac{(q^{cp})^2 + (x^{cp})^2}{2}.\end{aligned} \tag{17'}$$

Maximization of (17') yields a corner solution with respect to quality choice, because:

$$\frac{\partial \Phi_j}{\partial q_j} = -x_j < 0.$$

By the assumption of large numbers, an individual firm's quality choice does not influence $\overline{q}$. Hence, the subsidy scheme (16') cannot implement the optimal plan so that the government may try to adjust the subsidy taking account of the informational asymmetry.

However, the government can observe, and thus provide incentives for, individual production volumes but only for aggregate qualities. No subsidy that incorporates an incentive for the individual SOE to raise quality can be derived. Rather, each individual SOE acts as a free rider and chooses a lower quality level. Thus, no internal optimal solution exists for $\hat{q}_j$ so that:

$$\hat{q}_j = q_l.^{8} \tag{18}$$

The first-order necessary condition for maximizing (17') with respect to output choice is given by:

$$\frac{\partial \Phi_j}{\partial x_j} = \overline{q} - q_j + x^{cp} - x_j = 0,$$

which implies $x_j = x^{cp}$ for $q_j = \overline{q} = q_l$. However, because SOEs produce minimum quality and identical quantities in equilibrium, the combination $\{x^{cp}, q_l\}$ is inefficient in terms of the trade-off represented in (7). In order to restore efficiency, the government may increase the output incentive in

8 This confirms the result in Roland (1988, p. 129) that "product quality will always be sub-optimal for the consumer, regardless of his preferences, if the producer's decision of the 'quantity-mix' is based on a certain class of output-related bonus functions."

the subsidy scheme (17'). From (15), every output-related bonus system with $\partial s_j/\partial x_j > q^{cp} - p_j$ will provide such an incentive. The trade-off (7) limits each firm's production to the maximum feasible quantity given by:

$$\hat{x} = \frac{\beta f}{q_l(1-\hat{\theta})(1-\beta)}. \tag{19}$$

Thus, asymmetric information means that the CPE government's most preferred choice is unattainable. The consequences of this can be modeled in two ways. First, the government may change its plan, taking firms' quality and quantity choices given by (18) and (19) into account as constraints; this constrained optimal plan is implementable. Second, the government may leave its optimal plan intact; in which case, the plan will not be met. Although we follow the second option in the tradition of the optimal planning literature, switching to the first alternative would not alter any of our results, with the exception of Proposition 1.[9]

Uniform pricing $p_j = \hat{p}$ ensures that the consumer's budget constraint is met and that the markets clear. The residual of net costs to be covered by the subsidy is:

$$\hat{s} = (q_l - \hat{p})\hat{x} + f. \tag{20}$$

This subsidy is contingent upon *ex post* producer behavior, which differentiates a soft budget constraint from an *a priori* announced subsidy (Mitchell, 2000). However, note that $\hat{p}$ has no informational content; the producer is indifferent between prices and subsidies as sources of revenue. From the consumer's perspective, the effective price, denoted p_e, takes into account both the product price and the producer's subsidy. Hence, $np_e x = npx + ns = L$ such that, from (7), $\hat{p}_e = q_l L/(L - \hat{n}f)$. Using (13), we have:

$$\hat{p}_e = \frac{q_l[1-\hat{\theta}(1-\beta)]}{\beta}. \tag{21}$$

Equations (13) and (19) yield total SOE production as:

$$\hat{X} = \frac{\beta L}{q_l[1-\hat{\theta}(1-\beta)]}, \tag{22}$$

which is increasing with $\hat{\theta}$. From (1''), consumers in the CPE are left with welfare of:

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[9] Whichever alternative is chosen, n^{cp} always remains a second-best optimum; due to the separability of the government's objective function in (9), n^{cp} is independent of x^{cp} and q^{cp}.

$$\hat{U} = \frac{q_l - c}{q_l} \hat{n}^{1/\beta} \left(\frac{L}{\hat{n}} - f \right), \tag{23}$$

which is decreasing in $\hat{\theta}$ because $\hat{U}$ is increasing in $\hat{n} < n^*$ and $\hat{n}$ is decreasing with $\hat{\theta}$. We collect these results in the following proposition.

PROPOSITION 1: Central planning results in the actual variety of production meeting the plan, $\hat{n} = n^{cp}$, a product quality lower than planned, $\hat{q} < q^{cp}$, and physical overproduction, $\hat{x} > x^{cp}$. Welfare (total SOE output) is increasing (decreasing) with the quality of governance in the CPE.

From Dixit and Stiglitz (1977), the equilibrium of a private ownership market economy without government interference is a welfare maximum subject to a zero profit constraint for producers. Taken together with Proposition 1, we have the following corollary.

COROLLARY 1: If the government's objective can be described by any strictly quasi-concave function combining X and U, welfare in a CPE will always be lower than welfare in a private ownership market economy.

5 The Post-transition RMME

A successful political transformation increases the constraints on the state's ability to maximize the wealth of the ruling elite, i.e., it improves the quality of governance. Since the power of the ruling elite rests on its ability to capture the output of state-sector activity, a successful political transformation requires changes in the institutional balance towards more non-state activity and less scope for the government to implement its own objectives. Hence, we consider the transition to be a process of replacing a CPE by a RMME with CPE equilibrium characterizing the initial conditions. Importantly, we assume that this requires no closure of inherited old SOEs, which may or may not be partially privatized, but does involve the entry of m new non-state firms. However, the market access of these new firms is regulated by the government.

With the entry of non-state competitors, the central plan is no longer applicable. However, the government may continue to balance SOE budgets by price regulation and subsidization. As in the CPE, the RMME government derives benefits only from SOE output. Therefore, only SOEs are subsidized although price regulation applies to all producers. Both types of firms are assumed to behave as regulated monopolistic profit maximizers having identical technologies.[10] The informational constraints

[10] Technological differences are often used as a substitute for the efficiency differences between private and public sectors that result from different corporate governance practices. However, we do not consider corporate

on the government remain so that it cannot distinguish between privately and publicly provided product quality.

In this new environment, the RMME government's objective function, derived from (8), is:

$$\tilde{Z} = (\hat{n}x)^{\tilde{\theta}} U^{1-\tilde{\theta}}, \tag{24}$$

where $\hat{n}$ is the number of state-owned enterprises from the CPE level, a tilda denotes a RMME value, and $0 < \tilde{\theta} \leq \hat{\theta} < \frac{c}{q_l} < 1$ to underscore we are dealing with the economic consequences of a successful political transformation. After substituting for U from (1') and anticipating the equilibrium property that all products are of the same quality and are produced at the same quantities because of identical technologies, $\tilde{Z} = (\hat{n}x)^{\tilde{\theta}} (\alpha N^{1/\beta} x)^{1-\tilde{\theta}} = \alpha^{1-\tilde{\theta}} \hat{n}^{\tilde{\theta}} XN^{(1-\tilde{\theta}-\beta)/\beta}$, where $N = \hat{n} + m$. Incorporating the trade-off in (7), the RMME government's objective function can be written as:

$$\tilde{Z} = \hat{n}^{\tilde{\theta}} \frac{\alpha^{1-\tilde{\theta}}}{q} N^{(1-\tilde{\theta}-\beta)/\beta} (L - Nf). \tag{25}$$

Government preferences are derived by maximizing (25) over N and q. The first-order conditions for this problem are:

$$\frac{\partial \tilde{Z}}{\partial N} = \hat{n}^{\tilde{\theta}} \frac{\alpha^{1-\tilde{\theta}}}{q} N^{(1-\tilde{\theta}-\beta)/\beta} \left[\frac{(1-\tilde{\theta}-\beta)}{\beta} \frac{1}{N} (L - Nf) - f \right] = 0,$$

which requires that:

$$\frac{(1-\tilde{\theta}-\beta)}{\beta} \frac{L - Nf}{N} = f,$$

and

$$\frac{\partial \tilde{Z}}{\partial q} = \hat{n}^{\tilde{\theta}} N^{(1-\tilde{\theta}-\beta)/\beta} (L - Nf) \frac{(1-\tilde{\theta})\alpha^{-\tilde{\theta}} q - \alpha^{1-\tilde{\theta}}}{q^2} = 0,$$

which implies that:

$$(1-\tilde{\theta})q = q - c.$$

Using the trade-off in (7), these conditions yield government preferences over $\{N^R, q^R, x^R\}$ such that:

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governance issues so that the only difference between SOEs and non-state enterprises is that the former benefit the government.

$$N^R = \max\left\{\hat{n}, \frac{1-\tilde{\theta}-\beta}{1-\tilde{\theta}}\frac{L}{f}\right\}. \tag{26}$$

This specification allows for the possibility of a corner solution because the restrictions on $\tilde{\theta}$ and β do not exclude $1-\tilde{\theta}-\beta<0.$ In addition, we have:

$$q^R = c/\tilde{\theta}, \text{ and} \tag{27}$$

$$x^R = \frac{\tilde{\theta}}{c}\left(\frac{L}{N^R}-f\right). \tag{28}$$

Market access is regulated by *fiat* so that $\tilde{N}=N^R$. Comparing (26) with the CPE equilibrium in (13) indicates that post-transition market entry will never occur if $\tilde{\theta}=\hat{\theta}$. Rather, straightforward algebraic manipulation yields the result in the following proposition.

PROPOSITION 2: Post-transition entry of non-state producers requires more than simply a marginal increase in the quality of governance. Market entry, i.e., $\tilde{N}>\hat{n}$, occurs if and only if $\tilde{\theta}<(1-\beta)\hat{\theta}=\hat{\theta}/\sigma$.

Proposition 2 indicates that the ratio of post-transition to pre-transition values of governmental power, given by $\tilde{\theta}/\hat{\theta},$ must be lower than the inverse elasticity of substitution between the industrial products to allow for *de novo* market access. Suppose that, for $n<n^*=(1-\beta)L/f,$ each additional product variant increases welfare but decreases total output linearly in the CPE objective function given by (9). However, equation (25) does not include total output; it depends on SOE output only. Therefore, each new non-state firm increases consumer welfare but decreases total SOE output more the higher is the elasticity of substitution between product variants. Hence, θ must decrease by the value of this elasticity to allow for market entry.

Equilibrium product quality is determined by the interaction between government regulation, SOE subsidization, and the profit-maximizing behavior of the monopolistic producers. Now, SOEs react to quality-sensitive market demand. Given the representative consumer's income as $Y^d=L-T$,[11] demand for each individual product variant simplifies from (2) to:

$$x_i = \frac{(p/\alpha_i^{\beta})^{1/(\beta-1)}}{P^{\beta/(\beta-1)}}(L-T) \tag{2'}$$

[11] We show below that the profits of all non-state firms are also zero, i.e. there are no profits to be distributed to consumers.

for all $i = 1,...,\hat{n}, \hat{n}+1,...,\hat{n}+m = N,$ where p denotes the uniform regulated price imposed on all producers. Profits of non-state firms are $\pi_k = (p - q_k)x_k - f, k = 1,...,m.$ SOE profits are augmented by subsidies, $\pi_j = (p - q_j)x_j + s - f, j = 1,...,n.$ Under the large numbers assumption, individual firms cannot influence the price index P in (2'). Hence, profit maximization over individual quality choice, taking the regulated price p as given, yields the following first-order condition for all producers:

$$\frac{\partial \pi_i}{\partial q_i} = (p - q_i)\frac{\partial x_i}{\partial q_i} - x_i = 0. \tag{29}$$

From (2') $\partial x_i / \partial q_i = \frac{\beta}{1-\beta}\frac{x_i}{q_i - c} > 0.$ From (29), each firm's quality choice is given by:

$$p = \frac{q_i - (1-\beta)c}{\beta}, \tag{30}$$

for all i. With uniform price regulation, product quality will be identical for all state and non-state firms in the RMME. From (2'), outputs will also be identical. Since the regulated price depends on the occurrence of market entry, we distinguish two cases to determine equilibrium price $\tilde{p}$, SOE subsidy $\tilde{s}$, and product quality $\tilde{q}$ in the RMME.

Without market entry and based on its informational constraints, the government determines a price p and a subsidy level s to balance SOE budgets according to the following average-cost pricing rule:

$$p = \bar{q}(\tilde{m} = 0) + (f - s)/x, \tag{31}$$

where $\bar{q}(\tilde{m} = 0)$ represents average product quality. Since average-cost pricing implies zero profit distribution to consumers, $x = (L - \hat{n}s)/\hat{n}p$ from the consumer's budget constraint. Given the trade-off in (7), the government determines the regulated price to be:

$$p = \frac{L - \hat{n}s}{L - \hat{n}f}\bar{q}(\tilde{m} = 0). \tag{32}$$

Individual quality choice (30) and price regulation (32) together imply:

$$\frac{L - \hat{n}s}{L - \hat{n}f}\bar{q}(\tilde{m} = 0) = \frac{q - (1-\beta)c}{\beta}. \tag{33}$$

Since subsidies increase profits, budget balance for SOEs implies a reduction in quality because market demand reacts positively to higher quality. Hence we have the following Lemma:

LEMMA 1: Subsidizing SOE production in the RMME without market entry provides a disincentive for SOE quality improvement.

PROOF: See Appendix.

Adding quality-sensitive market demand as a source of finance to the firm provides sufficient incentives to forego state subsidies. The subsidy consistent with the government's quality preferences expressed by (27) is either $0,$ if the quality of governance is unchanged from CPE levels, or negative. If the quality of governance is higher than under central planning but not high enough to allow free market entry, i.e., $(1-\beta)\hat{\theta} \le \tilde{\theta} \le \hat{\theta},$ the government should impose lump-sum taxes on SOEs and redistribute the revenues to consumers. However, the relationship between the government and SOEs depends on offering non-negative subsidies in return for the benefits from SOE output. Hence, we conclude that $\tilde{s}$ must be zero as the following proposition states.

PROPOSITION 3A: Without market entry, SOEs will not be subsidized in the RMME.

PROOF: See Appendix.

From (A1) and $\tilde{s} = 0$, we derive the quality choice of SOEs as:

$$\tilde{q}(\tilde{m} = 0) = c / \hat{\theta}. \tag{34}$$

Now the regulated price can be derived from (30) to be:

$$\tilde{p}(\tilde{m} = 0) \quad = \quad \frac{c}{\beta\hat{\theta}}[1-(1-\beta)\hat{\theta}]. \tag{35}$$

When market entry occurs, SOEs may again be subsidized, although the new non-state firms will not receive government assistance. Price regulation is imposed on all firms and is based on an average-cost price for SOEs. Due to asymmetric information, the government is unable to differentiate between the product quality of old and new firms so that:

$$p = \bar{q}(\tilde{m} > 0) + (f - s)/x, \tag{31'}$$

where p applies both to SOEs and to non-state firms. Hence, all firms choose the same product quality, q, and both firm types will be of the same size x. The profits of an SOE equal $\pi_j = (p-q)x + s - f$, and the profits of a new non-state firm are $\pi_k = (p-q)x - f$. Market entry requires non-negative profits and regulation implies a budget balance for SOEs. Both conditions together result in $s \le 0,$ which immediately gives the result in the following proposition:

PROPOSITION 3B: In the presence of market entry, SOEs will not be subsidized in the RMME.

The consequences of the informational asymmetry between governments and firms are different between the CPE and the RMME. In a CPE, the asymmetry results in the non-attainability of the full-information benchmark solution. In a RMME, the informational asymmetry between government and firms implies that all firms be subject to a zero profit constraint. As there is no free private entry, this is important.

The profit-maximizing individual quality choice is given by equation (30) for both firm types. Without subsidization and in the presence of non-state producers, product quality satisfies the following condition for all producers:

$$\frac{L}{L-Nf}\overline{q}(\widetilde{m}>0)=\frac{q-(1-\beta)c}{\beta}. \tag{33'}$$

Hence, we have Proposition 4.

PROPOSITION 4: Product quality is higher with market entry than without, i.e., $\widetilde{q}(\widetilde{m}>0)=\frac{(1-\beta)c}{\widetilde{\theta}}$.

PROOF: See Appendix.

From equation (30), price regulation in the presence of market entry yields:

$$\widetilde{p}(\widetilde{m}>0)=\frac{(1-\beta)c}{\beta\widetilde{\theta}}(1-\widetilde{\theta}), \tag{35'}$$

which is both higher than without market entry and also increases with the quality of public governance.

6 The Transition from a CPE to a RMME

Propositions 3A and 3B indicate that SOEs will not be subsidized in the RMME so that we state the following result.

COROLLARY 2: Transition from a CPE to a RMME hardens the budget constraints of SOEs.

In the unregulated monopolistic competition market economy of Dixit and Stiglitz (1977), equilibrium prices satisfy the condition that marginal cost

equal marginal revenue. For equal product qualities, this implies that product variants are priced according to $p^* = q/\beta$ from (2), (5) and (6). From (29), $\partial\pi/\partial q > 0$ for $p = q/\beta$ which implies a corner solution for quality choice, such that all unregulated monopolistic competitors choose maximum quality, $q = q_h$. From (34), (35), Proposition 4 and (35'), we thus have $\tilde{p}(\tilde{m}=0) < \tilde{p}(\tilde{m}>0) < p^*$ and $\tilde{q}(\tilde{m}=0) < \tilde{q}(\tilde{m}>0) < q^*$. If price regulation is considered to be more market-oriented when the resulting prices are closer to market prices so that they induce higher product qualities, Propositions 2 and 4 imply the following result.

COROLLARY 3: Higher post-transition qualities of governance imply more market-oriented policies with respect to market access and price regulation.

Preliminary empirical work linking post-transition political systems and reform choices confirms that competitive democracies have made the greatest progress in implementing market-oriented reforms, while non-competitive regimes have made the least (World Bank, 2002). Other work, i.e., Dethier *et al.* (1999), EBRD (1999), and Fidrmuc (2003) asserts that democratization facilitates economic liberalization in transition countries. Our analytical results are consistent with these interpretations.

In the post-transition economy, consumer welfare equals $\tilde{U} = (\tilde{\alpha}/\tilde{q})\tilde{N}^{(1-\beta)/\beta}(L - \tilde{N}f) = [(\tilde{q}-c)/\tilde{q}]\tilde{N}^{(1-\beta)/\beta}(L-\tilde{N}f)$ from (1''). If $(1-\beta)\hat{\theta} < \tilde{\theta} \le \hat{\theta}$, i.e. with no market entry, $\tilde{U}(\tilde{m}=0) > \hat{U}$ because $\tilde{q}(\tilde{m}=0) = \frac{c}{\tilde{\theta}} > q_l = \hat{q}$ due to hardened budget constraints. For $\tilde{\theta} < (1-\beta)\hat{\theta}$, i.e. with market entry, welfare will increase more because of further gains in quality and variety from Propositions 2 and 4. Using (7), total post-transition output $\tilde{X}$ equals $(L - \tilde{N}f)/\tilde{q}$ so that the above result on welfare holds for $\tilde{X}$ in reverse. Therefore, we state the following proposition.

PROPOSITION 5: The transition from a CPE to a RMME raises welfare due to quality and variety gains but reduces total output. In addition, post-transition welfare (total output) is increasing (decreasing) in the post-transition level of public governance.

Output per firm also decreases so that total SOE output, from which government benefits are derived, is lower. Hence, a successful transition from a CPE to a RMME must involve a reduction in government power as

the driving force of institutional change. This highlights the genuinely political aspect of transition.[12]

De Melo *et al.* (2001), Krueger and Ciolko (1998), Heybey and Murrell (1999), Stuart and Panayotopoulos (1999), and Falcetti *et al.* (2002) find empirical evidence that transition's initial conditions, i.e., pre-transition macroeconomic and structural distortions, have a significant influence on post-transition output. Within our framework we can connect a pre-transition CPE equilibrium to output in a post-transition RMME without explicit reference to the fundamental quality of governance. Due to the assumptions on the labor market and the general symmetry properties in production and consumption, equilibrium outcomes in all institutional settings imply respectively identical prices, identical production volumes and identical qualities for all types of active producers. Using the consumer budget constraint, $\hat{p}_e \hat{n} \hat{x} = L = \tilde{p} \tilde{N} \tilde{x}$ and

$$\tilde{X} = \frac{\hat{p}_e}{\tilde{p}} \hat{X}. \tag{36}$$

While the effective price in a CPE, $\hat{p}_e$, is given by (21), $\tilde{p}$ varies in a RMME according to whether *de novo* market entry occurs. Hence we have:

$$\tilde{p} = \begin{cases} (c/\beta\hat{\theta})\,[1-(1-\beta)\hat{\theta}], & \text{for } \tilde{m} = 0, \text{ and} \\ [(1-\beta)c/\beta\tilde{\theta}\,]\,(1-\tilde{\theta}), & \text{for } \tilde{m} > 0, \end{cases} \tag{37}$$

from (35) and (35'). Without market entry, $\hat{p}_e / \tilde{p}(\tilde{m} = 0) = q_l \hat{\theta} / c = q_l / q^{cp}$. From (7) and the CPE equilibrium properties, this equals $x^{cp} / \hat{x} = 1 / \hat{\Theta}$, where CPE plan fulfillment $\hat{\Theta}$ is an observable term. Therefore, we have:

$$\begin{aligned} &\tilde{X} = [\,\tfrac{(1-\tilde{M})}{\hat{\theta}} + \tilde{M}(\hat{p}_e / \tilde{p})\,]\,\hat{X}, \\ &where\ \tilde{M} = \begin{cases} 0 \text{ for } \tilde{m} = 0, \text{and} \\ 1 \text{ for } \tilde{m} > 0. \end{cases} \end{aligned} \tag{38}$$

For the transition from a CPE to a RMME, equation (38) indicates that post-transition total output is a function of both initial conditions, i.e., CPE price, output, and plan fulfillment, denoted by $\hat{p}_e$, $\hat{X}$, and $\hat{\Theta}$, respectively, and of post-transition liberalization policies, i.e., market access and the extent of price regulation, denoted by $\tilde{M}$ and $\tilde{p}$. From Proposition 5, post-transition output decreases with improvements in the quality of public governance, which in turn implies more market-oriented policies from Corollary 3. Therefore, the following major proposition holds.

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[12] This may not hold in a model that allows for productive inefficiency under central planning that interferes with the correlation between total output and welfare changes across pre-transition and post-transition situations. Hence, for less efficient CPEs, welfare-increasing reforms that do not decrease government power, are possible.

PROPOSITION 6: Post-transition output can be accounted for by observable initial conditions and liberalization policies. In particular, total post-transition output increases with pre-transition output and decreases with more liberal market access and more market-oriented price regulation. For post-transition output to depend on something other than initial conditions, entry of *de novo* firms is required.

Finally, this result has an important policy implication that is contained in the following corollary.

COROLLARY 4: Proposition 6 describes a spurious relationship because both initial conditions and liberalization policies are fully explained by the quality of governance in the pre-transition and post-transition states.

Transition's initial conditions are CPE price, output, and plan fulfillment. The CPE price is determined in (21) and CPE output is determined in (22). Both are functions of parameters, i.e., $\beta,$ describing consumer tastes, L, total labor assumed constant, q_l, the minimum quality, and of the quality of public governance, i.e. $\hat{\theta}$. Plan fulfillment is the ratio of CPE output to planned CPE output, both of which are functions of parameters and the quality of public governance. Regarding liberalization policies, i.e., market access and the extent of price regulation, the condition for market entry is given in Proposition 2. It depends on the quality of governance in the pre-transition and post-transition states and parameters of the utility function. The post-transition price depends on market entry, parameters from the utility and cost functions, and the quality of public governance in the RMME, i.e. $\widetilde{\theta}$. Hence, given the parameters of the model, the quality of governance in the pre-transition and post-transition states determines initial conditions, post-transition liberalization policies, and thus by (38), post-transition output completely.

7 Conclusions

A successful transition from a CPE to a RMME based on improvements in the quality of public governance is shown to yield higher product variety and quality at a cost of lower output. This result is consistent with the usual description of the long-term economic benefits of transition from a CPE having as its main feature large quantities but low quality and little variety of output. Our results do not depend on productive inefficiency but highlight the role of public governance so that they complement the literature focussing on efficiency gains within the firm due to better corporate governance (Estrin, 2002). However, low-quality public governance need not be outright corruption; distorted government choices drive our results. Although the model is static, the results suggest that changes in the quality of governance and accountability of government are underlying forces of path dependency in post-transition economic

performance. Hence, path dependency in transition is more a political, rather than an economic, phenomenon.

This framework may help empirical research address the serious problem of mismeasurement of real income in Eastern Europe and the CIS because the largest portion of this bias is probably due to uncaptured quality and variety effects. By combining measures of output, variety and quality of production, a more reliable picture of recent economic developments in these countries can be presented. Applying trade-based measures of product differentiation might be instrumental in such an approach. Trade-based measures have already been used to study the links between variety and per capita income in an endogenous growth context (Funke and Ruhwedel, 2003) and between variety and export performance of transition economies (Funke and Ruhwedel, 2002; Kandogan, 2003).

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References

Adachi, Mitsutoshi M. (2000): Product market competition in transition economies: increasing varieties and consumer loyalty. Journal of Comparative Economics, 28 (4), pp. 700-715.

Banerjee, Abhijit V. (1997): A theory of misgovernance. Quarterly Journal of Economics, 112 (4), pp. 1289-1332.

Berg, Andrew, Borenzstein, Eduardo, Sahay, Ratna, Zettelmeyer, Jeromin (1999): The evolution of output in transition economies: explaining the differences. Working Paper No. 99/73, International Monetary Fund, Washington, DC.

Berkowitz, Daniel M., Cooper, David J. (1997): Start-ups and transition. Working Paper No. 84, William Davidson Institute at the Unversity of Michigan Business School, Ann Arbor, MI.

Boeri, Tito, Oliveira Martins, Joaquim (2000): Varieties, jobs and EU enlargement. Working Paper No. 301, William Davidson Institute at the Unversity of Michigan Business School, Ann Arbor, MI.

Bose, Pinaki, Kemme, David M. (2002): Liberalization, entry and product quality in transition economies. Economic Systems, 26 (4), pp. 353-366.

Campos, Nauro F., Coricelli, Fabrizio (2002): Growth in transition: what we know, what we don't, and what we should. Journal of Economic Literature, 40 (3), pp. 793-836.

De Melo, Martha, Denizer, Cevdet, Gelb, Alan, Tenev, Stoyan (2001): Circumstance and choice: the role of initial conditions and policies in transition economies. World Bank Economic Review, 15 (1), pp. 1-31.

Dethier, Jean-Jacques, Ghanem, Hafez, Zoli, Edda (1999): Does democracy facilitate the economic transition? An empirical study of Central and Eastern Europe and the Former Soviet Union. Policy Research Discussion Paper No. 2194, World Bank, Washington, DC.

Dixit, Avinash, Stiglitz, Joseph (1977): Monopolistic competition and optimum product diversity. American Economic Review, 67 (3), pp. 297-308.

EBRD (1999): Transition Report 1999. Ten Years of Transition, EBRD, London.

Ehrlich, Isaac, Lui, Francis T. (1999): Bureaucratic corruption and endogenous economic growth. Journal of Political Economy, 107 (6, pt. 2), pp. S270-S293.

Estrin, Saul (2002): Competition and corporate governance in transition. Journal of Economic Perspectives, 16 (1), pp. 101-124.

Falcetti, Elisabetta, Raiser, Martin, Sanfey, Peter (2002): Defying the odds: initial conditions, reforms, and growth in the first decade of transition. Journal of Comparative Economics, 30 (2), pp. 229-250.

Fidrmuc, Jan (2003): Economic reform, democracy and growth during postcommunist transition. European Journal of Political Economy, 19 (3), pp. 583- 604.

Funke, Michael, Ruhwedel, Ralf (2002): Export variety and export performance. Weltwirtschaftliches Archiv, 138 (1), pp. 97-114.

Funke, Michael, Ruhwedel, Ralf (2003): Export variety and economic growth in East European transition eonomies. Discussion Paper No. 8, BOFIT, Helsinki.

Grossman, Herschel I. (2000): The state: agent or proprietor. Economics of Governance 1 (1), pp. 3-11.

Hall, Robert E., Jones, Charles (1997): Levels of economic activity across countries. American Economic Review 87 (2), pp. 173-177.

Havrylyshyn, Oleh, Wolf, Thomas, Berengaut, Julian, Castello-Branco, Marta, van Rooden, Ron, Mercer-Blackman, Valerie (1999): Growth experience in transition countries: 1990-98. Occasional Paper No. 184, International Monetary Fund, Washington, DC.

Hellman, Joel, Shankerman, Mark (2000): Intervention, corruption and capture: the nexus between enterprises and the state. Economics of Transition 8 (3), pp. 545-576.

Heybey, Berta, Murrell, Peter (1999): The relationship between economic growth and the speed of liberalization during transition. Journal of Policy Reform 3 (2), pp. 121-137.

Kandogan, Yener (2003): Does product differentiation explain the increase in exports of transition countries? Working Paper No, 599, William Davidson Institute at the Unversity of Michigan Business School, Ann Arbor, MI.

Kaufmann, Daniel, Kraay, Aart, Mastruzzi, Massimo (2003): Governance matters III: governance indicators for 1996-2002. Policy Research Discussion Paper No. 3106, World Bank, Washington, DC.

Kaufmann, Daniel, Kraay, Aart, Zoido-Lobat´on, Pablo (1999): Governance matters.

Policy Research Discussion Paper No. 2196. World Bank, Washington, DC.

Kaufmann, Daniel, Kraay, Aart, Zoido-Lobat´on, Pablo (2000): Governance matters: from measurement to action. Finance and Development 37 (2), pp. 10-13.

Kaufmann, Daniel, Kraay, Aart, Zoido-Lobat´on, Pablo (2002): Governance matters II: updated indicators for 2000/01. Policy Research Working Paper No.2772, World Bank, Washington, DC.

Krueger, Gary, Ciolko, Marek (1998): A note on initial conditions and liberalization during transition. Journal of Comparative Economics 26 (4), pp. 718-734.

Laffont, Jean-Jaques, Meleu, Mathieu (2001): Separation of powers and development. Journal of Development Economics 64 (1), pp. 129-145.

Mitchell, Janet (2000): Theories of soft budget constraints and the analysis of banking crises. Economics of Transition 8 (1), pp. 59-100.

Myrdal, Gunnar (1970): The Challenge of World Poverty: A World Anti-Poverty Program. Penguin Books, London.

Niskanen, William A. (1971): Bureaucracy and Representative Government. Aldine, Chicago.

Roland, G´erard (1988): Product quality in a Soviet-type economy. European Economic Review 32 (1), pp. 129-139.

Selowsky, Marcelo, Martin, Ricardo (1997): Policy performance and output growth in the transition economies. American Economic Review 87 (2), pp. 349-358.

Shleifer, Andrei, Vishny, Robert (1993): Corruption. Quarterly Journal of Economics 108 (3), pp. 599-617.

Stiglitz, Joseph (2002): Participation and development: perspectives from the comprehensive development paradigm. Review of Development Economics 6 (2), pp. 163-183.

Stuart, Robert C., Panayotopoulos, Christina M. (1999): Decline and recovery in transition economies: the impact of initial conditions. Post-Soviet Geography and Economics, 40 (4), pp. 267-280.

Venables, Anthony J. (1987): Trade and trade policy with differentiated products: a Chamberlinian-Ricardian model. Economic Journal, 97 (387), pp. 700-717.

World Bank (2002): Transition. The First Ten Years. Analysis and Lessons for Europe and the Former Soviet Union. World Bank, Washington, DC.

Appendix

A.1 Proof of Lemma 1

In equilibrium, qualities are identical and correctly observed by the government, i.e. $q = \overline{q}(\widetilde{m} = 0)$. Equation (33) implies:

$$\frac{L - \hat{n}s}{L - \hat{n}f} = \frac{q - (1-\beta)c}{\beta q},$$

or

$$\frac{(1-\beta)c}{\beta q_j} - \frac{1}{\beta} = -\frac{L - \hat{n}s}{L - \hat{n}f}.$$

Expanding the RHS numerator gives:

$$\frac{(1-\beta)c}{\beta q} - \frac{1}{\beta} = -\frac{L - \hat{n}f + \hat{n}f - \hat{n}s}{L - \hat{n}f}.$$

Rearranging yields:

$$\frac{(1-\beta)c}{\beta q} - \frac{1}{\beta} - 1 = \frac{\hat{n}s - \hat{n}f}{L - \hat{n}f}$$

or

$$\frac{1-\beta}{\beta}\left[\frac{c}{q} - 1\right] = \frac{s/f - 1}{L/(\hat{n}f) - 1}.$$

Making use of the definition of $\hat{n}$ in (13) and verifying that $L/(\hat{n}f) - 1 = \beta/(1-\hat{\theta})(1-\beta)$, we derive:

$$\frac{1-\beta}{\beta}\left[\frac{c}{q} - 1\right] = \frac{s/f - 1}{\beta}(1-\beta)(1-\hat{\theta}),$$

such that:

$$\frac{c}{q} - 1 = \frac{s-f}{f}(1-\hat{\theta}),$$

which implies:

$$\tilde{q}(\tilde{m}=0)=\frac{cf}{(1-\hat{\theta})s+\hat{\theta}f}, \tag{A1}$$

with $\partial\tilde{q}/\partial s<0$ q.e.d.

A.2 Proof of Proposition 3A

Rearranging (A1) yields:

$$s=\frac{f}{(1-\hat{\theta})}\left(\frac{c}{\tilde{q}(\tilde{m}=0)}-\hat{\theta}\right).$$

Substituting $q^R=c/\tilde{\theta}$ for $\tilde{q}(\tilde{m}=0)$ from (27) gives:

$$\tilde{s}=\frac{f}{(1-\hat{\theta})}(\tilde{\theta}-\hat{\theta})\leq 0,$$

for $(1-\beta)\hat{\theta}\leq\tilde{\theta}\leq\hat{\theta}.$ q.e.d.

A.3 Proof of Proposition 4

In equilibrium, $q=\overline{q}(\tilde{m}>0)$. By the definition of $\tilde{N}=N^R$ in (26), equation (33') implies:

$$\left[1-\frac{1-\tilde{\theta}-\beta}{1-\tilde{\theta}}\right]^{-1}q=\frac{q-(1-\beta)}{\beta},$$

i.e.,

$$\frac{1-\tilde{\theta}}{\beta}q=\frac{q}{\beta}-\frac{(1-\beta)c}{\beta},$$

such that

$$\left[\frac{1-\tilde{\theta}}{\beta}-\frac{1}{\beta}\right]q=-\frac{(1-\beta)c}{\beta},$$

defining a quality level of:

$$\tilde{q}(\tilde{m}>0)=\frac{(1-\beta)c}{\tilde{\theta}}$$

for both firm types. Since market entry $\tilde{m}>0$ requires that $\tilde{\theta}<(1-\beta)\hat{\theta},(1-\beta)c/\tilde{\theta}>c/\hat{\theta}$ and $\tilde{q}(\tilde{m}>0)>\tilde{q}(\tilde{m}=0)$. q.e.d.